Gunter, Jason

From: Nations, Mark [mnations@doerun.com]
Sent: Monday, November 11, 2013 12:06 PM
To: Gunter, Jason
Cc: England, Jason; Yingling, Mark; Wohl, Matthew; robert.hinkson@dnr.mo.gov; Ty Morris (TMorris@barr.com); brandon.wiles@dnr.mo.gov
Subject: Rivermines Progress report
Attachments: RM_10-13.doc; 2013-10-10 RM NPDES Pace Lab Report.pdf; October_Rivermines_Pilot_Test_Samples.pdf

Jason,
Attached is the October 2013 report. Let me know if you have questions.
Thanks, Mark

THE DOE RUN COMPANY

Remediation Group

Mark Nations
Mining Properties Manager
mnations@doerun.com

November 11, 2013

Mr. Jason Gunter
Remedial Project Manager
U.S. Environmental Protection Agency
Region 7 - Superfund Branch
11201 Renner Blvd.
Lenexa, KS 66219

Re: The Doe Run Company – Elvins/Rivermines Mine Tailings Site Monthly Progress Report

Dear Mr. Gunter:

As required by Article VI, Section 56 of the Unilateral Administrative Order (UAO) (CERCLA-07-2005-0169) for the referenced project and on behalf of The Doe Run Company, the progress report for the period October 1, 2013 through October 31, 2013 is enclosed. If you have any questions or comments, please call me at 573-518-0800.

Sincerely,

Mark Nations
Mining Properties Manager

Enclosures
c: Jason England – TDRC
Mark Yingling – TDRC (electronic only)
Matt Wohl – TDRC (electronic only)
Robert Hinkson – MDNR
Ty Morris – Barr Engineering
Brandon Wiles – MDNR

Elvins/Rivermines Mine Tailings Site
Park Hills, Missouri
Removal Action - Monthly Progress Report
Period: October 1, 2013 – October 31, 2013

1. **Actions Performed and Problems Encountered This Period:**

   a. Between the dates of October 1, 2013 and October 31, 2013, flow through the pilot test was directed in two separate configurations. In the first flow configuration, water from the seepage pond passed through the roughing filter and discharged through the bypass pipe. In the second configuration, flow from the seepage pond passed through the iron filter and discharged into the round tank, after which it discharged from the round tank directly into the effluent channel.

   b. Excess clogging occurred in the roughing filter this period. This caused overtopping of the pool between October 1, 2013 and October 9, 2013. On October 9, 2013, the roughing filter was back-flushed to address this issue.

   c. Continued to take analytical samples from the pilot test one to three times a week. Samples were taken from the seepage pond (system influent), and the ZVI filter effluent (RMP-Polish). Samples of the roughing filter (RMP-Rough) were not taken due to malfunctioning of the syphon used to collect the sample.

   d. Continued to take analytical samples from the seep pond effluent and the western treatment pond effluent to monitor the metals reduction of the treatment pond.

   e. Flow through the seepage ponds was measured at approximately 200 gallons per minute on October 9, 2013. This is within range of the 100 to 200 gallons per minute that is typically observed in the system. Flow rates into the treatment cells have been consistently decreasing since the start of flow rate data collection in June 2013.

   f. Flow to the east treatment cell was turned off in the previous period and remained off throughout this period.

2. **Analytical Data and Results Received This Period:**

   a. Dissolved zinc concentrations ranged between 21.39 mg/L and 26.52 mg/L in the polishing filter effluent.

   b. Total zinc concentrations in the polishing filter effluent ranged between 26.18 mg/L and 26.92 mg/L.

   c. Total iron concentrations in the polishing filter effluent ranged between 0.043 mg/L and 0.076 mg/L.

   d. Total suspended solids concentrations in the polishing filter effluent ranged between non-detect and 5.0 mg/L.

   e. During this period, water samples were collected from just upstream of Old Missouri Highway 32, as well as from upstream and downstream of the confluence of the site discharge with Flat River. The analytical results for this event are included with this progress report.

   f. During this period, the Ambient Air Monitoring Report for July 2013 was completed. Any issues identified in this report are discussed below. A copy of this document has been sent to your attention.

      The July 2013 Ambient Air Monitoring Report noted the following:

      - The action levels for lead and dust were not exceeded.
      - No samples were taken with the TSP monitors on 07/04/13 and 07/05/13 due to the holiday.
      - No samples were taken with the PM_{10} monitors on 07/06/13 due to the holiday.
      - No sample was taken on the Big River #4 TSP monitor on 07/29/13 due to the run time of the monitor being outside of the acceptable limits. This issue has been addressed.

- No sample was taken on the Rivermines #2 (Wood and Barton) TSP monitor on 07/29/13 due to the run time of the monitor being outside of the acceptable limits. This issue has been addressed.
- Chain of custody date issues were corrected for the Big River #4 QA TSP monitor for filter ID numbers 8803575 and 8803551.

3. Developments Anticipated and Work Scheduled for Next Period:

a. Continue analytical sampling and field measurements three times a week. No WET tests are planned.

b. Continue to operate the renovated pilot test.

c. Complete monthly water sampling activities as described in the Removal Action Work Plan.

d. Complete air monitoring activities as described in the Removal Action Work Plan.

e. Continue monitoring the western treatment pond to see that the hydraulics are working properly and evaluate the metals reduction as the pond continues to come online.

f. Further investigate issues that pertain to the leaking of water from the seepage pond manhole. If required, remove any debris located in the pipe between the manhole and the west treatment cell. It is anticipated that a pipe cleaning contractor will be needed to investigate and remove the obstruction in the west pond piping.

g. Pending successful operation of the west pond, cleanout of the old media in the east pond may begin later this year.

h. Begin preliminary work on a long-term surface water management plan including treatment and disposal/discharge options for the seepage from the tailings pile that is currently treated in the biocells.

4. Changes in Personnel:

a. None.

5. Issues or Problems Arising This Period:

a. None.

6. Resolution of Issues or Problems Arising This Period:

a. None.

Pace Analytical Services, Inc.
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

October 28, 2013

Amy Sanders
The Doe Run Company
P. O. Box 500
Viburnum, MO 65566

RE: Project: NPDES (RIVERMINES)
Pace Project No.: 60155239

Dear Amy Sanders:
Enclosed are the analytical results for sample(s) received by the laboratory on October 11, 2013. The results relate only to the samples included in this report. Results reported herein conform to the most current TNI standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Jamie Church

jamie.church@pacelabs.com
Project Manager

Enclosures

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, Inc.
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

CERTIFICATIONS

Project: NPDES (RIVERMINES)
Pace Project No.: 60155239

Kansas Certification IDs
9608 Loiret Boulevard, Lenexa, KS 66219
WY STR Certification #: 2456.01
Arkansas Certification #: 13-012-0
Illinois Certification #: 003097
Iowa Certification #: 118
Kansas/NELAP Certification #: E-10116
Louisiana Certification #: 03055
Nevada Certification #: KS000212008A
Oklahoma Certification #: 9205/9935
Texas Certification #: T104704407-13-4
Utah Certification #: KS000212013-3
Illinois Certification #: 003097

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, Inc.
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SAMPLE SUMMARY

Project: NPDES (RIVERMINES)
Pace Project No.: 60155239

Lab ID	Sample ID	Matrix	Date Collected	Date Received
60155239001	10838/RIVERMINES DOWNSTREAM	Water	10/10/13 12:33	10/11/13 08:40
60155239002	10839/RIVERMINES UPSTREAM	Water	10/10/13 12:19	10/11/13 08:40
60155239003	10840/RIVERMINES 001	Water	10/10/13 12:24	10/11/13 08:40

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SAMPLE ANALYTE COUNT

Project: NPDES (RIVERMINES)
Pace Project No.: 60155239

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
60155239001	**10838/RIVERMINES DOWNSTREAM**	EPA 200.7	SMW	3	PASI-K
		EPA 200.8	JGP	3	PASI-K
		EPA 200.8	JGP	3	PASI-K
		SM 2540D	RAH	1	PASI-K
		EPA 300.0	OL	1	PASI-K
60155239002	**10839/RIVERMINES UPSTREAM**	EPA 200.7	SMW	3	PASI-K
		EPA 200.8	JGP	3	PASI-K
		EPA 200.8	JGP	3	PASI-K
		SM 2540D	RAH	1	PASI-K
		EPA 300.0	OL	1	PASI-K
60155239003	**10840/RIVERMINES 001**	EPA 200.8	JGP	3	PASI-K
		SM 2540D	RAH	1	PASI-K
		SM 2540F	RAH	1	PASI-K
		EPA 300.0	OL	1	PASI-K

Pace Analytical Services, Inc.
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ANALYTICAL RESULTS

Project: NPDES (RIVERMINES)
Pace Project No.: 60155239

Sample: 10838/RIVERMINES DOWNSTREAM **Lab ID: 60155239001** Collected: 10/10/13 12:33 Received: 10/11/13 08:40 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
200.7 Metals, Total	Analytical Method: EPA 200.7 Preparation Method: EPA 200.7								
Calcium	**172000**	ug/L	100	10.4	1	10/14/13 15:50	10/16/13 17:29	7440-70-2	
Magnesium	**57300**	ug/L	50.0	6.5	1	10/14/13 15:50	10/16/13 17:29	7439-95-4	
Total Hardness by 2340B	**666000**	ug/L	500		1	10/14/13 15:50	10/16/13 17:29		
200.8 MET ICPMS	Analytical Method: EPA 200.8 Preparation Method: EPA 200.8								
Cadmium	**1.6**	ug/L	0.50	0.050	1	10/16/13 11:00	10/17/13 13:59	7440-43-9	
Lead	**8.0**	ug/L	1.0	0.030	1	10/16/13 11:00	10/17/13 13:59	7439-92-1	
Zinc	**4980**	ug/L	10.0	1.0	1	10/16/13 11:00	10/17/13 13:59	7440-66-6	
200.8 ICPMS, Dissolved (LF)	Analytical Method: EPA 200.8 Preparation Method: EPA 200.8								
Cadmium, Dissolved	**1.0**	ug/L	0.50	0.050	1	10/21/13 19:09	10/25/13 11:54	7440-43-9	
Lead, Dissolved	**4.7**	ug/L	1.0	0.030	1	10/21/13 19:09	10/25/13 11:54	7439-92-1	
Zinc, Dissolved	**3710**	ug/L	10.0	1.0	1	10/21/13 19:09	10/25/13 11:54	7440-66-6	
2540D Total Suspended Solids	Analytical Method: SM 2540D								
Total Suspended Solids	ND	mg/L	5.0	5.0	1		10/16/13 11:37		
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0								
Sulfate	**521**	mg/L	50.0	8.0	50		10/18/13 09:26	14808-79-8	M1

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, Inc.
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ANALYTICAL RESULTS

Project: NPDES (RIVERMINES)
Pace Project No.: 60155239

Sample: 10839/RIVERMINES UPSTREAM **Lab ID: 60155239002** Collected: 10/10/13 12:19 Received: 10/11/13 08:40 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
200.7 Metals, Total	Analytical Method: EPA 200.7 Preparation Method: EPA 200.7								
Calcium	**46800**	ug/L	100	10.4	1	10/14/13 15:50	10/16/13 17:37	7440-70-2	
Magnesium	**30400**	ug/L	50.0	6.5	1	10/14/13 15:50	10/16/13 17:37	7439-95-4	
Total Hardness by 2340B	**242000**	ug/L	500		1	10/14/13 15:50	10/16/13 17:37		
200.8 MET ICPMS	Analytical Method: EPA 200.8 Preparation Method: EPA 200.8								
Cadmium	ND	ug/L	0.50	0.050	1	10/16/13 11:00	10/17/13 14:03	7440-43-9	
Lead	**4.6**	ug/L	1.0	0.030	1	10/16/13 11:00	10/17/13 14:03	7439-92-1	
Zinc	**40.8**	ug/L	10.0	1.0	1	10/16/13 11:00	10/17/13 14:03	7440-66-6	
200.8 ICPMS, Dissolved (LF)	Analytical Method: EPA 200.8 Preparation Method: EPA 200.8								
Cadmium, Dissolved	**0.052J**	ug/L	0.50	0.050	1	10/21/13 19:09	10/25/13 11:58	7440-43-9	
Lead, Dissolved	**0.53J**	ug/L	1.0	0.030	1	10/21/13 19:09	10/25/13 11:58	7439-92-1	
Zinc, Dissolved	**51.8**	ug/L	10.0	1.0	1	10/21/13 19:09	10/25/13 11:58	7440-66-6	D9
2540D Total Suspended Solids	Analytical Method: SM 2540D								
Total Suspended Solids	ND	mg/L	5.0	5.0	1		10/16/13 11:38		
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0								
Sulfate	**55.8**	mg/L	5.0	0.80	5		10/18/13 10:09	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: NPDES (RIVERMINES)
Pace Project No.: 60155239

Sample: 10840/RIVERMINES 001 **Lab ID: 60155239003** Collected: 10/10/13 12:24 Received: 10/11/13 08:40 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
200.8 MET ICPMS	Analytical Method: EPA 200.8 Preparation Method: EPA 200.8								
Cadmium	**2.8**	ug/L	0.50	0.050	1	10/16/13 11:00	10/17/13 14:15	7440-43-9	
Lead	**7.8**	ug/L	1.0	0.030	1	10/16/13 11:00	10/17/13 14:15	7439-92-1	
Zinc	**19400**	ug/L	10.0	1.0	1	10/16/13 11:00	10/17/13 14:15	7440-66-6	
2540D Total Suspended Solids	Analytical Method: SM 2540D								
Total Suspended Solids	**13.0**	mg/L	5.0	5.0	1		10/16/13 11:38		
2540F Total Settleable Solids	Analytical Method: SM 2540F								
Total Settleable Solids	ND	mL/L/hr	0.20	0.20	1		10/11/13 12:35		
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0								
Sulfate	**833**	mg/L	100	16.0	100		10/18/13 10:52	14808-79-8	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, Inc.
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Lenexa, KS 66219
(913)599-5665

QUALITY CONTROL DATA

Project: NPDES (RIVERMINES)
Pace Project No.: 60155239

QC Batch: MPRP/24716
QC Batch Method: EPA 200.7
Analysis Method: EPA 200.7
Analysis Description: 200.7 Metals, Total
Associated Lab Samples: 60155239001, 60155239002

METHOD BLANK: 1271673 Matrix: Water
Associated Lab Samples: 60155239001, 60155239002

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Calcium	ug/L	ND	100	10/16/13 16:23	
Magnesium	ug/L	ND	50.0	10/16/13 16:23	
Total Hardness by 2340B	ug/L	ND	500	10/16/13 16:23	

LABORATORY CONTROL SAMPLE: 1271674

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Calcium	ug/L	10000	9940	99	85-115	
Magnesium	ug/L	10000	9760	98	85-115	
Total Hardness by 2340B	ug/L		65000			

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1271675 1271676

Parameter	Units	60155085001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Calcium	ug/L		10000	10000	166000	163000	128	92	70-130	2	9	
Magnesium	ug/L		10000	10000	20600	20100	100	95	70-130	3	9	
Total Hardness by 2340B	ug/L	427000			500000	489000				2		

MATRIX SPIKE SAMPLE: 1271677

Parameter	Units	60155118002 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Calcium	ug/L	31.2 mg/L	10000	41900	106	70-130	
Magnesium	ug/L	3.2 mg/L	10000	13000	98	70-130	
Total Hardness by 2340B	ug/L	91.1 mg/L		158000			

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: NPDES (RIVERMINES)
Pace Project No.: 60155239

QC Batch: MPRP/24708 Analysis Method: EPA 200.8
QC Batch Method: EPA 200.8 Analysis Description: 200.8 MET
Associated Lab Samples: 60155239001, 60155239002, 60155239003

METHOD BLANK: 1271551 Matrix: Water
Associated Lab Samples: 60155239001, 60155239002, 60155239003

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Cadmium	ug/L	ND	0.50	10/17/13 13:25	
Lead	ug/L	ND	1.0	10/17/13 13:25	
Zinc	ug/L	1.1J	10.0	10/17/13 13:25	

LABORATORY CONTROL SAMPLE: 1271552

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Cadmium	ug/L	40	40.5	101	85-115	
Lead	ug/L	40	37.5	94	85-115	
Zinc	ug/L	100	105	105	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1271553 1271554

Parameter	Units	60155238001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Cadmium	ug/L	0.067J	40	40	38.6	39.6	96	99	70-130	2	20	
Lead	ug/L	1.9	40	40	39.0	39.7	93	95	70-130	2	20	
Zinc	ug/L	133	100	100	228	228	95	95	70-130	0	20	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, Inc.
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QUALITY CONTROL DATA

Project: NPDES (RIVERMINES)
Pace Project No.: 60155239

QC Batch: MPRP/24819
QC Batch Method: EPA 200.8
Analysis Method: EPA 200.8
Analysis Description: 200.8 MET Dissolved
Associated Lab Samples: 60155239001, 60155239002

METHOD BLANK: 1275753 Matrix: Water
Associated Lab Samples: 60155239001, 60155239002

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Cadmium, Dissolved	ug/L	ND	0.50	10/25/13 11:29	
Lead, Dissolved	ug/L	ND	1.0	10/25/13 11:29	
Zinc, Dissolved	ug/L	ND	10.0	10/25/13 11:29	

LABORATORY CONTROL SAMPLE: 1275754

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Cadmium, Dissolved	ug/L	40	41.8	105	85-115	
Lead, Dissolved	ug/L	40	41.1	103	85-115	
Zinc, Dissolved	ug/L	100	114	114	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1275755 1275756

Parameter	Units	60155238001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Cadmium, Dissolved	ug/L	ND	40	40	40.4	40.3	101	101	70-130	0	20	
Lead, Dissolved	ug/L	0.17J	40	40	41.4	41.3	103	103	70-130	0	20	
Zinc, Dissolved	ug/L	77.4	100	100	185	182	107	104	70-130	2	20	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: NPDES (RIVERMINES)
Pace Project No.: 60155239

QC Batch: WET/44046 Analysis Method: SM 2540D
QC Batch Method: SM 2540D Analysis Description: 2540D Total Suspended Solids
Associated Lab Samples: 60155239001, 60155239002, 60155239003

METHOD BLANK: 1272788 Matrix: Water
Associated Lab Samples: 60155239001, 60155239002, 60155239003

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Total Suspended Solids	mg/L	ND	5.0	10/16/13 11:33	

SAMPLE DUPLICATE: 1272789

Parameter	Units	5088294001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Suspended Solids	mg/L	31.7	25.0	24	25	

SAMPLE DUPLICATE: 1272790

Parameter	Units	60155238002 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Suspended Solids	mg/L	ND	ND		25	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: NPDES (RIVERMINES)
Pace Project No.: 60155239

QC Batch: WETA/26699 Analysis Method: EPA 300.0
QC Batch Method: EPA 300.0 Analysis Description: 300.0 IC Anions
Associated Lab Samples: 60155239001, 60155239002, 60155239003

METHOD BLANK: 1274375 Matrix: Water
Associated Lab Samples: 60155239001, 60155239002, 60155239003

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Sulfate	mg/L	ND	1.0	10/18/13 08:57	

LABORATORY CONTROL SAMPLE: 1274376

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Sulfate	mg/L	5	5.0	100	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1273041 1273042

Parameter	Units	60155239001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Sulfate	mg/L	521	250	250	697	738	70	87	80-120	6	15	M1

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, Inc.
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QUALIFIERS

Project: NPDES (RIVERMINES)
Pace Project No.: 60155239

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to changes in sample preparation, dilution of the sample aliquot, or moisture content.

ND - Not Detected at or above adjusted reporting limit.

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PRL - Pace Reporting Limit.

RL - Reporting Limit.

S - Surrogate

1,2-Diphenylhydrazine (8270 listed analyte) decomposes to Azobenzene.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

LABORATORIES

PASI-K	Pace Analytical Services - Kansas City

ANALYTE QUALIFIERS

D9	Dissolved result is greater than the total. Data is within laboratory control limits.
M1	Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

Pace Analytical Services, Inc.
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: NPDES (RIVERMINES)
Pace Project No.: 60155239

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60155239001	10838/RIVERMINES DOWNSTREAM	EPA 200.7	MPRP/24716	EPA 200.7	ICP/19207
60155239002	10839/RIVERMINES UPSTREAM	EPA 200.7	MPRP/24716	EPA 200.7	ICP/19207
60155239001	10838/RIVERMINES DOWNSTREAM	EPA 200.8	MPRP/24708	EPA 200.8	ICPM/2572
60155239002	10839/RIVERMINES UPSTREAM	EPA 200.8	MPRP/24708	EPA 200.8	ICPM/2572
60155239003	10840/RIVERMINES 001	EPA 200.8	MPRP/24708	EPA 200.8	ICPM/2572
60155239001	10838/RIVERMINES DOWNSTREAM	EPA 200.8	MPRP/24819	EPA 200.8	ICPM/2592
60155239002	10839/RIVERMINES UPSTREAM	EPA 200.8	MPRP/24819	EPA 200.8	ICPM/2592
60155239001	10838/RIVERMINES DOWNSTREAM	SM 2540D	WET/44046		
60155239002	10839/RIVERMINES UPSTREAM	SM 2540D	WET/44046		
60155239003	10840/RIVERMINES 001	SM 2540D	WET/44046		
60155239003	10840/RIVERMINES 001	SM 2540F	WET/43960		
60155239001	10838/RIVERMINES DOWNSTREAM	EPA 300.0	WETA/26699		
60155239002	10839/RIVERMINES UPSTREAM	EPA 300.0	WETA/26699		
60155239003	10840/RIVERMINES 001	EPA 300.0	WETA/26699		

Pace Analytical
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Sample Condition Upon Receipt

WO#: 60155239

60155239

Client Name: Doe Run

Optional
Proj Due Date:
Proj Name:

Courier: Fed Ex [X] UPS ☐ USPS ☐ Client ☐ Commercial ☐ Pace ☐ Other ☐

Tracking #: 7968 8060 1957 Pace Shipping Label Used? Yes ☐ No [X]

Custody Seal on Cooler/Box Present: Yes [X] No [X] Seals intact: Yes [X] No [X]

Packing Material: Bubble Wrap [X] Bubble Bags ☐ Foam ☐ None ☐ Other ☐

Thermometer Used: T-192 / T-194 Type of Ice: (Wet) Blue None ☐ Samples received on ice, cooling process has begun.
(circle one)

Cooler Temperature: 2.3, 0.9

Temperature should be above freezing to 6°C

Date and initials of person examining contents: JM 10/10/13 930

Chain of Custody present:	[X]Yes ☐No ☐N/A	1.
Chain of Custody filled out:	[X]Yes ☐No ☐N/A	2.
Chain of Custody relinquished:	[X]Yes ☐No ☐N/A	3.
Sampler name & signature on COC:	[X]Yes ☐No ☐N/A	4.
Samples arrived within holding time:	[X]Yes ☐No ☐N/A	5.
Short Hold Time analyses (<72hr):	[X]Yes [X]No ☐N/A	6. Soil. Soil.
Rush Turn Around Time requested:	☐Yes [X]No ☐N/A	7.
Sufficient volume:	[X]Yes ☐No ☐N/A	8.
Correct containers used:	[X]Yes ☐No ☐N/A	
Pace containers used:	[X]Yes ☐No ☐N/A	9.
Containers intact:	[X]Yes ☐No ☐N/A	10.
Unpreserved 5035A soils frozen w/in 48hrs?	☐Yes ☐No [X]N/A	11.
Filtered volume received for dissolved tests?	☐Yes ☐No [X]N/A	12.
Sample labels match COC:	[X]Yes ☐No ☐N/A	
Includes date/time/ID/analyses Matrix: water		13.
All containers needing preservation have been checked.	☐Yes ☐No [X]N/A	
All containers needing preservation are found to be in compliance with EPA recommendation.	☐Yes ☐No [X]N/A	14.
Exceptions: VOA, coliform, TOC, O&G, WI-DRO (water), Phenolics	[X]Yes ☐No	Initial when completed n/a / Lot # of added preservative
Trip Blank present:	☐Yes ☐No [X]N/A	
Pace Trip Blank lot # (if purchased): n/a		15.
Headspace in VOA vials (>6mm):	☐Yes ☐No [X]N/A	16.
Project sampled in USDA Regulated Area:	☐Yes ☐No [X]N/A	17. List State:

Client Notification/ Resolution: Copy COC to Client? Y / N Field Data Required? Y / N

Person Contacted: Date/Time:

Comments/ Resolution:

Jami Church

Project Manager Review: Date: 10/11/13

CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

THE DOE RUN COMPANY

Section A — Required Client Information:

Company:	The Doe Run Company
Address:	PO Box 500
Email To:	asanders@doerun.com
Phone: (573) 689-4535	Fax: (573) 244-8179
Requested Due Date/TAT:	5 To 7 Days

Section B — Required Project Information:

Report To:	Amy Sanders
Copy To:	
Purchase Order No.:	
Project Name:	NPDES (Rivermines)
Project Number:	

Section C — Invoice Information:

Attention:	Amy Sanders
Company Name:	The Doe Run Company
Address:	PO Box 500, Viburnum, MO 65566
Pace Quote Reference:	
Pace Project Manager:	
Pace Profile #:	

REGULATORY AGENCY: ☐ NPDES ☐ GROUND WATER ☐ UST ☐ RCRA

Site Location STATE: MO

Page: 1 of 1

COC#: 177 60/55239

Section C — Required Sample Information

Valid Matrix Codes: MATRIX — WATER (WT), WASTE WATER (WW), SOIL/SOLID (SL)

SAMPLE ID (A-Z, 0-9 / , -) Sample IDs MUST BE UNIQUE

ITEM #	SAMPLE ID	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED DATE/TIME: COMPOSITE START DATE (mm/dd/yy)	COMPOSITE START TIME (Military)	COMPOSITE END / GRAB DATE (mm/dd/yy)	COMPOSITE END / GRAB TIME (Military)	SAMPLE TEMP AT COLLECTION	Total # OF CONTAINERS	Bottles / Preservatives: 250 mL Unpreserved	500 mL Unpreserved	1 L Unpreserved	250 mL Nitric	250 mL Amber Glass H_2SO_4	250 mL Plastic H_2SO_4	1000 mL Amber HCL	250 mL ZnAc/NaOH	500 mL Amber Glass H_2SO_4	Requested Analysis Filtered (Y/N)	*See Additional Comments Below — ↓ Analysis Test ↓	SESCO Lab Project Nbr / Lab I.D.
																			N N N N N N N N N N N N N N N N		
1	10838	WW	G			10/10/13	1233	4.4	2		1		1							CD-D, PB-D, ZN-D, HARD, SO4, CD-T, PB-T, TSS-T, ZN-T	Rivermines Downstr	01
2																						
3	10839	WT	G			10/10/13	1219		2				1							CD-D, PB-D, ZN-D, HARD, SO4, CD-T, PB-T, TSS-T, ZN-T	Rivermines Upstrea	02
4																						
5	10840	WT	G			10/10/13	1224	4.3	3	1		1	1							SO4, SS, TSS, CD-T, PB-T, ZN-T	Rivermines 001	03
6																						
7																						
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ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME (Military)	ACCEPTED BY / AFFILIATION	DATE	TIME (Military)	SAMPLE CONDITIONS
	Amber Nipper	10/10/13	1405				2.2 Y Y Y

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: Amber Nipper

SIGNATURE of SAMPLER: Amber Nipper — DATE Signed (MM/DD/YY): 10/10/13

Temp in °C | pH in SU | Received on Ice (Y/N) | Custody Sealed Cooler (Y/N)